LAXOPLUMERIA AND A NOTE ON BOTANICAL APPROACH

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The present study has proved that Laxoplumeria has an apocarpous ovary surrounded at the base by an annular disk with two lobes opposite the sutures between the carpels and that the fruit is of two long follicular mericarps containing numerous lanose seeds. The known species are three, distributed in the upper Amazon valley and extending from northeastern Peru, in the basin of the upper Marañon, to the northwestern area of the state of Matto Grosso in Brazil, in the basin of the upper Rio Madeira. They are very closely related, and comprise, besides the type species (which has been hitherto misinterpreted) and a species originally placed in Tonduzia, a novelty which is described below.

LAXOPLUMERIA Mgf., in Notizbl. 9: 981. 1926.

Bisquamaria Pichon, in Bull. Mus. Hist. Nat. Paris, ser. 2, 19: 299. 1947.

Laticiferous trees; leaves alternate; inflorescences apparently terminal, many-flowered, the bracts minute; calyx eglandular; corolla small, the tube cylindric, the lobes linear, longer than the tube, the left margins overlapping; anthers free, lanceolate, dehiscent the full length; disk surrounding base of ovary annular, low, with two lobes opposite the sutures of the carpels; ovary apocarpous, glabrous, the ovules numerous, in 3--6 ranks; style filiform, the clavuncle indusiate above and tunicate below, the stigmatic apiculi conic, acute; fruit of two long follicular mericarps, the seeds numerous, flat, invested with long hairs.

Type species: L. Tessmannii Mgf.

The genus belongs with the "Plumieroideae - Plumiereae - Alstoniinae" of K. Schumann's treatment of the Apocynaceae in Engler & Prantl's "Die NatÜrlichen Pflanzenfamilien" 4 (2): 135 (1895). I cannot suggest any very close generic relative. A key to the species follows:

1. Inflorescences puberulent, long and ample; calyx-lobes less than 1 mm. long; filaments attached manifestly above middle of corolla-tube; petioles about 3 cm. long...L. Tessmannii.
1. Inflorescences glabrous.....2
   2. Inflorescences abbreviated, 4 cm. or less long; calyx-lobes 1--2 mm. long; filaments attached at about the middle of the corolla-tube; leaf-blades glabrous; petioles about 3--4 cm. long.....L. Baehniana.
   2. Inflorescences long, over 10 cm. long; calyx-lobes less

than 1 mm. long; filaments attached a little above the middle of the corolla-tube; petioles very short, the decurrent base of the blade extending almost to the stem... .....L. macrophylla.

Except for the apocarpous ovary and his oversight of the disk, Markgraf's description of L. Tessmannii well characterizes the species. L. macrophylla was excellently described, but in the genus Tonduzia and consequently a new combination is necessary. The isotype of this species deposited in the United States National Herbarium was examined by me.

LAXOPLUMERIA MACROPHYLLA (Kuhlm.) Monachino, comb. nov.
Tonduzia macrophylla Kuhlm., in Archiv. Jard. Bot. Rio de Janeiro 5: 208. 1930.
Bisquamaria macrophylla Pichon, in Bull. Mus. Hist. Nat. Paris, ser. 2, 19: 300. 1947.

LAXOPLUMERIA BAEHNIANA Monachino, sp. nov.

Arbor L. Tessmannii et L. macrophylla valde affinis; foliis glabris; petiolis 3--4 cm. longis; inflorescentiis abbreviatis glabris; lobis calycis 1--2 mm. longis; staminibus prope mediam tubi corollae adfixis.

Laticiferous tree, the branchlets ridged, the young growth resinous; leaves alternate; petioles 3--4 cm. long; blades oblanceolate, 11--30 cm. long, 4--10 cm. broad, rounded or obtuse at apex, greatly tapering into the petiole at base, glabrous, the principal lateral nerves 15--24 pairs, arcuate, the reticulation moderately close, not prominent; inflorescence apparently terminal, sessile, cymose, resinous, glabrous, its branches alternate, divaricate, the pedicels up to 3 mm. long; calyx-lobes ovate-oblong, 1--2 mm. long, obtuse, resinous, glabrous, eglandular; corolla-tube cylindric, about 4 mm. long, glabrous outside, pilose within; corolla-lobes greatly twisted in bud, the left margin overlapping, linear, at maturity about 11 mm. long, 1.3 mm. broad, pilose within toward the base; stamens attached near the middle of the corolla-tube, the filaments short, the anthers lanceolate, polleniferous the whole length; disk surrounding base of ovary annular, low, with two lobes opposite the sutures of the carpels; ovary apocarpous, superior, slightly depressed at apex, several-ridged dorsally, glabrous; ovules numerous, in about 4 series in each carpel; style filiform, 1--1.5 mm. long; clavuncle cylindric, about 0.6 mm. long, indusiate at apex and tunicate at base (at maturity); stigmatic apiculi conic, about 0.3 mm. long, acute, microscopically papillose; follicules (Krukoff 5720) suggestive of Alstonia, about 38 cm. long, glabrous; seeds numerous, elliptic, acute at the ends, about 22 mm. long and 3 mm. broad, densely pilose on the abaxial surface, the hairs long, 10--15 mm. long,

brown; embryo in middle of seed, the radicle about 4 mm. long, the cotyledons flat, lanceolate, about 8 mm. long.

Type: Ricardo de Lemos Froes 21694, basin of the upper Rio Jurua, Valparaiso, Iq. Campinas, munic. Eirunepe, state of Amazonas, Brazil, in high forest at border of creek, October 26, 1946; tree 30 feet high, 8 inches in diameter, latex abundant. Deposited in the Britton Herbarium at the New York Botanical Garden.

Additional specimens examined: B. A. Krukoff 5720, basin of Rio Purus, near mouth of Rio Macauhan (tributary of Rio Yaco), lat. 9°20' S, long. 69° W, territory of Acre, Brazil, on terra firma, August 27, 1933; tree 110 feet high, 3 feet in diameter. Deposited in the Britton Herbarium at the New York Botanical Garden. As this collection consists of fruiting material only, its specific identification is not positive

This species is named in honor of Dr. Charles Baehni, of the Conservatoire Botanique at Geneva, who made possible the conclusions arrived at in the present revision by sending me several flowers of an isotype of L. Tessmannii.

It might prove profitable to sketch here the history of the identification of L. Baehniana. The recital will demonstrate the reward (from the standpoint that a faithful contribution to the science of taxonomy is its own reward) of exhaustive investigation in describing new plants or proposing new names, and will serve as a commentary upon botanical approach.

An attempt was made to identify the present novelty early in 1947. The habit of the plant recalled L. Tessmannii, of which a photograph of the type is available at the New York Botanical Garden. When the description of L. Tessmannii was read, to my astonishment, several important discrepancies were noted, the most important of which was that of the alleged syncarpous ovary. The ovary in Froes 21694 is clearly apocarpous.

With the exception of the original description in the "Notizblatt" little direct information was found regarding Laxoplumeria. M. Pichon (Bull. Mus. Hist. Nat. Paris, ser. 2, 19: 362. 1947) did not hesitate to place the genus in the synonymy of Aspidosperma, although he had not seen material of Laxoplumeria. He relied, apparently, on the description of the syncarpous ovary. Markgraf also suggested an affinity of his genus with Aspidosperma, probably as a result of erroneous observation of the flower structure and lack of information regarding the fruit.

Search for an isotype of L. Tessmannii in the Bassler Herbarium was unsuccessful. Through the intermediation of Dr. H. N. Moldenke inquiries were addressed to many institutions concerning the availability of Laxoplumeria material. The species was not found in any of the American herbaria. Correspondence with the curators of the herbaria at Munich and at Stockholm was equally fruitless. In response to an inquiry, Tessmann himself

replied that he had no duplicates of this collection.

A fragment of Froes 21694 was mailed to Markgraf, who, in his letter of January 9, 1948, wrote that the plant did not agree with Laxoplumeria and should constitute a new genus. He dwelled at some length on the important differences the Froes plant showed from Laxoplumeria: the insertion of the stamens, the shape of the anthers and stigma, and the character of the ovary.

With the description of Laxoplumeria disagreeing with my plant in some important characters, with the apparent loss of the only known herbarium voucher for Laxoplumeria, and with the author of the genus denying any generic tie between the two plants, there seemed, indeed, to be justification for the erection of a new apocynaceous genus. But mindful of how

"The Moving Finger writes; and, having writ,
Moves on: nor all thy Piety nor Wit
Shall hire it back to cancel half a Line,
Nor all thy Teare wash out a Word of it,"

doggedly skeptical, and still not satisfied with the case for proposing or accepting a new genus, I addressed two queries to Markgraf: did he base the differences stated between Froes 21694 and Laxoplumeria on actual material comparison of the two or did he rely on his memory for Laxoplumeria? And, secondly, was it ascertained that the actual type of L. Tessmannii had been destroyed in the bombing of Berlin? Markgraf replied (his letter of November 19, 1948) that Dr. Mattfeld of Dahlem confirmed that the type had been burned up completely and there were no duplicates. The fragment of Froes 21694 had been compared with the printed description only and reliance had been based on memory. Markgraf, however, now reversed his previous conclusion: he added that, although he had at first suggested that Froes 21694 should typify a new genus, it now occurred to him to be not very probable that two genera with similar leaf arrangement of an exceptional character in the Apocynaceae, together with similar form of inflorescence and shape of flowers, would occur in the same region without any other essential difference than the ovary. He would now propose, therefore, to call my material L. Tessmannii.

In the meantime exhaustive search for an isotype of Laxoplumeria was finally rewarded by success. The herbarium at Geneva was the last possible depository where the Tessmann collection might be had, and the last attempt was successful. The examination of a few flowers of the isotype of L. Tessmannii there preserved settled within an hour the matter of identification and thus finally terminated my two years' search.